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G620 Pinkeye

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Pinkeye

The signs and causes of pinkeye, a painful eye disease that is common in cattle, are covered, as well as control and treatment procedures.

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Pinkeye (infectious bovine keratoconjunctivitis) is a common infectious disease affecting the eyes of cattle. The name describes the redness and inflammation of the conjunctiva (lining of the eyelid and eyeball), an early sign of the disease. Pinkeye was once thought to be a summertime disease in white-faced cattle, but it is now known to occur at all seasons of the year and in all breeds of cattle.

Clinical Signs

One or both eyes may be involved. Excessive weeping of the affected eye and closure due to pain are the two signs most commonly observed. As the disease progresses, the cornea becomes cloudy or white. An ulcer (eroded circular spot) frequently develops near the center of the cornea. Blood vessels often extend into the cornea from the white of the eye (sclera) as the healing processes begin.

Cattle with pinkeye keep the affected eye or eyes closed because of pain and to avoid bright sunlight. They lose weight because they are reluctant to forage for feed and water. The course of the infection may run for 4 to 8 weeks, or even longer.

As the eye begins to heal, white scar tissue infiltrates the cornea. In most cases this scar will gradually disappear as healing progresses and vision will be restored. However, in severely affected eyes, a white scar often persists and interferes with vision.

If the ulceration is severe enough to penetrate all layers of cells forming the cornea, the fluid in the eyeball will escape. This results in the iris and/or lens protruding partially or entirely through the ulceration. If this occurs, there will be permanent blindness in the affected eye.

Eye disease resulting from infectious bovine rhinotracheitis (IBR) virus or vitamin A deficiency may superficially resemble pinkeye, but there are differences in the visible signs of the diseases. IBR causes conjunctivitis and leads to a thick, yellow discharge from the eye, but does not usually cause the corneal ulceration seen in pinkeye. Vitamin A deficiency results in excessive watering of the eye, night blindness, and may cause cloudiness of the cornea in severe cases, giving the eyeball a dry, lusterless appearance.

Losses

Pinkeye rarely causes death of affected cattle; however, loss of weight and discounts at the market cause substantial losses to the cattle industry. Discounts of $25 to $50 on affected calves at the market are common. These animals are unthrifty and unprofitable until the pain subsides and they return to normal feeding habits. Cattle blind in one eye are nervous and difficult to manage in any confinement situation. An animal with both eyes affected has extreme difficulty in finding feed and water unless restricted to a small pen.

Causes

The infectious organism most commonly isolated from the eyes of cattle affected with pinkeye is *Moraxella bovis*. Veterinarians have also found that *Mycoplasma bovoculi* and IBR virus are capable of causing an eye infection resembling pinkeye.

Environmental and nutritional factors contribute a great deal to the development of pinkeye. The ultraviolet component of sunlight is necessary to initiate the disease. Irritation from weed and grass seed that get into the eyes during grazing contribute to the infection, or may initiate or simulate pinkeye. Dust is also a factor. Vitamin A deficiency and inadequate protein intake may be factors that possibly contribute to lessened resistance to eye infections.

The face fly has been associated with an increased incidence of pinkeye in recent years. Research at the University of Nebraska's North Platte Station has demonstrated that face fly feeding produces mechanical injury to the conjunctiva and spreads IBR virus and *Moraxella bovis* from animal to animal as the fly feeds on eye and nose secretions of cattle.

The infection can also be spread by direct contact when the eye secretions of an infected animal are rubbed into the eye of an uninfected animal.

Control

Pinkeye is caused by a combination of factors. A good control program should incorporate procedures to reduce initial eye irritation.

An intensive fly control program is essential to limit the spread of pinkeye in a herd of cattle.

The new insecticide-impregnated plastic ear tags now on the market are effective in controlling the horn fly and face fly. These ear tags are also an aid in controlling the stable fly and house fly, and remain effective for up to 5 months.

Organophosphate insecticides are generally useful in killing face flies and related small flies. Unfortunately, these compounds have little residual action and must be applied frequently--daily applications are best--in order to be effective. Fencing water tanks to force cattle to use dust bags daily as they come in to drink is a practical method of fly control. Be sure to hang the dust bags low enough so the dust is applied to the face of the animal. Since some flies breed in the manure of cattle, feeding low levels of larvacides, such as phenothiazine, or the organophosphate preparations, such as Rabon, may be useful in limiting reproduction. As face flies are not limited to a specific farm, an area approach to fly control should be more effective.

Cattle often have grass or weed seeds in their eyes, and these materials no doubt irritate the eye and contribute to the development of pinkeye. Clipping pastures to reduce the amount of tall grass and weeds can be an important management technique in controlling pinkeye.

Several pinkeye vaccines have been developed over the years, but their effectiveness has been disappointing in most herds. These vaccines are more effective if at least two vaccinations can be given prior to the season of highest incidence. In problem herds, culture swabs can be taken from several eyes and sent to a diagnostic laboratory for bacterial isolation. This information can aid your veterinarian in determining if a pinkeye vaccine or mixed bacterin vaccine should be used in the herd.

Treatment

Cattle with pinkeye can be helped by prompt treatment. Since the cornea heals slowly, any ulceration is likely to require several weeks for complete recovery. Sunlight is intensely irritating to the damaged eye, and affected cattle benefit greatly by being confined in a dark shelter. This practice also makes feed and water more readily available for the affected animal.

Most antibiotics in eye sprays are effective in reducing the infection. Many eye sprays also contain an anesthetic to relieve the intense pain due to infection. A dye to act as a filter for some of the light rays is also commonly included and probably gives some protection to the injured eye. The aerosol pinkeye sprays are most effective if applied several times a day.

Injection of an antibiotic-steroid combination under the conjunctiva or eyelid has been helpful in reducing inflammation and in getting treatment into the deeper tissues of the eye. This should be repeated at 3- to 5-day intervals.

Severely affected eyes heal more rapidly if the eyelids are sutured together. This technique keeps the eye closed to block out sunlight and other irritants, and prevents drying of the injured cornea. Tears hasten healing by washing away bacteria and promoting tissue repair. A patch can be glued over the affected eye to shut out sunlight and other irritants. The success of this procedure depends on the effectiveness of the adhesive used. Poorly adhered patches allow the entry of egg-laying house flies. The resulting fly maggots can have a devastating effect on the affected eye. The eye needs protection for 2 to 3 weeks to allow healing.

References to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Nebraska Cooperative Extension is implied.

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